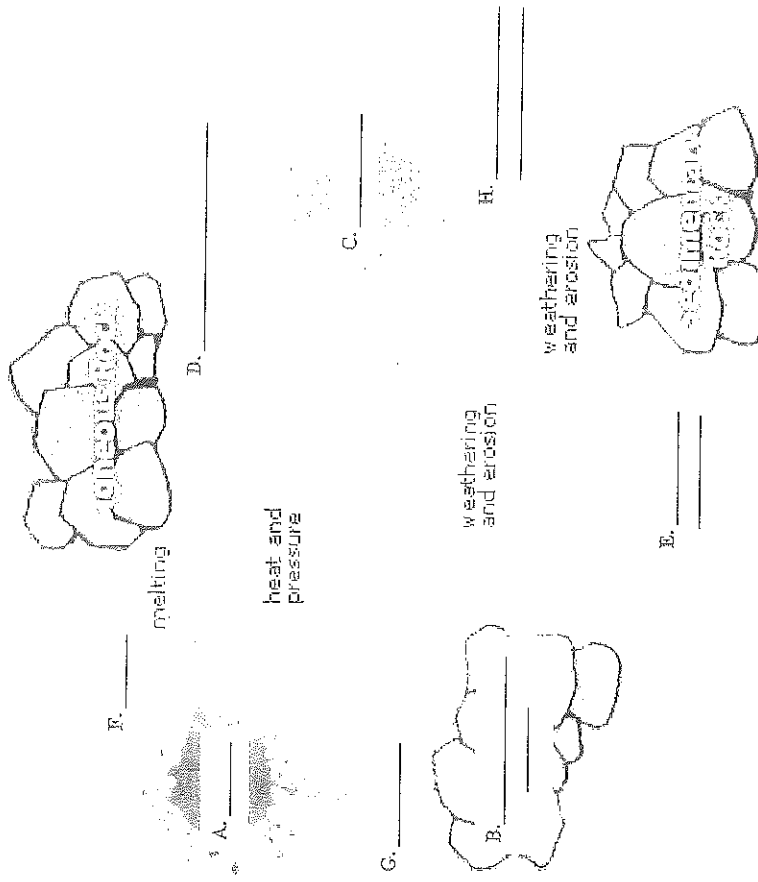


## Concept Map: Rock Cycle

Use the following phrases:

- Magma
- Sediment
- Melting
- Cooling
- Compaction and Cementation
- Weathering and Erosion
- Heat and Pressure
- Metamorphic Rock



## What is a Rock?

Rocks are a combination of crystals from one (same) or more minerals. All rocks are not inorganic; some rocks have a composition of organic material (coal).

Rocks are valued based on their importance to the use of man. Some rocks were:

- Shaped into weapons
- Tools for farming and managing the ground
- used as a form of money
- used as building materials

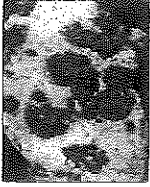
Rocks are consistently changing shape size and even composition. The Rock Cycle is the process in which one type of rock is changed into another.

## Rock Cycle

1. **Sedimentary**- is formed by involving eroded (erosion) material, sediments and grains of soil, flowing down to the lowest point (bottom of form of water). Over the years these materials are compacted and together  
Example -- sandstone, limestone
2. **Metamorphic** -- Is produced when extreme heat from inner Earth (core) and extreme pressure compacts sedimentary rock.  
Example -- garnet, marble, slate
3. **Igneous** -- Is produced once the heated rock or molted rock (magma) moves to the Earth's crust and cools.  
Example -- granite

When minerals break along flat surfaces or in thin sheets


**Deposition**



Rock formed by cementation or compaction on or near the surface of the Earth

**Moh's Scale**

**Metamorphic Rock**

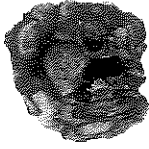


**Cementation**

**Extrusive Rock**

**Streak**

**Fossil**




Naturally occurring solid made of one or more minerals

How a mineral reflects light

Tendency of minerals to break along curved or uneven surfaces

**Luster**

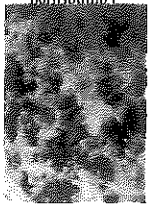


**Igneous Rock**

**Composition**

Rock formed/cooled *under* the surface of the Earth

**Intrusive Rock**




Scale used to determine the hardness of a mineral

Formation of rock by fragments sticking together

**Composition**

**Streak**




Rock formed from cooled magma

**Extrusive Rock**

when sediments are trapped to the surface

**Sedimentary Rock**

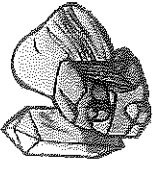


**Luster**

**Intrusive Rock**

the remains or impression of a living thing in rock

**Metamorphic Rock**




Inorganically formed crystals

Rock formed under intense heat and pressure

what a material is made from

**Deposition**




**Mineral**

**Igneous Rock**

**Rock**

Rock formed/cooled *above* the surface of the Earth




**Mineral**

**Fossil**

**Moh's Scale**

**Intrusive Rock**




**Erosion**

Colored powder left behind when a mineral is pulled across a unglazed tile

**Fracture**

**Composition**



**Cleavage**

The movement of sediments by wind, water or ice.

**Deposition**

# ROCKS AND MINERALS K-1-100

K-Key word	I-Information (define in your own words)	M-Memory (Illustrate)	S-Sentence
MINERAL			
LUSTER			
STREAK			
CLEAVAGE			
FRACTURE			
ROCK			
EROSION			
DEPOSITION			

Name \_\_\_\_\_

3. Use the knife or sharpener to shave off small pieces of two different crayon rocks. What process does this represent?

### A Model of the Rock Cycle

#### Purpose:

- 1) To summarize the rock cycle
- 2) To analyze and predict the sequence of events in the rock cycle
- 3) To represent the natural world using models and identify their limitations

#### Background Information:

Weathering is the breakdown of rocks and minerals at and just below the Earth's surface; can be physical or chemical.

Sediment is soil, sand, and minerals that are transported and deposited by wind and water.

Erosion is the movement of soil and rock material by agents such as water and wind.

Deposition is also known as sedimentation, is the geological process by which wind, water, or ice create a sediment deposit by laying down of material that has been eroded and transported from another location.

Lava is rock that in its molten form (as magma

Magma is molten rock beneath the surface of the earth

Igneous rocks are formed from the cooling and crystallization of magma.

Igneous rocks can be extrusive, meaning that they cooled on or very near the Earth's surface, or intrusive, meaning that they cooled below the earth's surface.

Sedimentary rocks are formed by the deposition of sediments formed by the deposition of sediments.

Metamorphic rocks result when a sedimentary or an igneous rock is changed by temperature and pressure within the crust of the Earth.

#### Materials:

Wax crayons in several colors	10cm x 10cm square of aluminum foil
Crayon sharpener or plastic knife	Goggles

#### Procedure & Observations:

1. Each crayon represents an igneous rock. How is it like this type of rock?

2. What is a limitation (a way it doesn't accurately represent) of using a crayon to represent this type of rock?

What do the shavings represent?

4. Gently blow the shavings. What process does this represent?

5. Drop the shavings onto the piece of foil. What process does this represent?

6. Fold the foil over and press between your hands until the shavings stick together. What process does this represent?

What type of rock does this process produce?

How is your model like this type of rock?

What is a limitation of using a crayon to represent this type of rock?

7. PUT ON YOUR GOGGLES! TIE BACK LONG HAIR & LOOSE CLOTHING.

8. Make a small boat from your foil. Put the rock made in step 4 and any shavings you have in the boat. Put the boat onto the hot plate.

9. Take the boat off the hot plate as soon as the crayon rocks begin to melt.

10. Let the crayon rock cool. What process does this represent?

What type of rock does this process produce?

How is your model like this type of rock?

What is a limitation of using a crayon to represent this type of rock?

11. Heat the crayon rock until it is completely melted and the colors have blended. Let the crayon rock cool. What process does this represent?

What type of rock does this process produce?

How is your model like this type of rock?

Conclusion: Draw a diagram of the rock cycle below. Include the weathering, erosion, deposition/sedimentation, compaction, heat, pressure, and all three classifications of rocks.